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This instruction implements Air Force Policy Directive (AFPD) 21-1, *Managing Aerospace Equipment Maintenance*, AFMCI 21-122, *Foreign Object Damage* (FOD) *Prevention Program* and AMARCI 21-127, *Foreign Object Damage (FOD) Prevention*. It provides and sets up procedures, and assigns responsibilities for a tool management program in AMARC. It applies to the Aircraft Management (LA), Logistics (LG), Plans and Programs (XP) and Comptroller (FM) Directorates.

SUMMARY OF CHANGES

Defines responsibilities and procedural changes assigned to the AMARC tool issue center. It incorporates additional requirements and instructions for issuing, marking and securing of tools. Certification stamps documentation has been added; also additional procedures for lost tool search. AFMC Form 309, **AFMC Tool Control Inventory Record** instructions has been added. All changes are marked with an |.

1. General. FOD critical areas in AMARC are defined in AMARCI 21-127 in accordance with (IAW) AFMCI 21-122. These areas include any process area involving assembly of components which may be installed on weapons systems, such as overland shipments (can include wood mill and reclamation) and shop components (ejection seats, avionics equipment, etc.). Tools are potential foreign objects which, if left in weapons systems, could seriously affect the safe operation of the system and cause personal injury. All other areas are considered non-critical. Prevention of FOD caused by tools is dependent on tool control. This is a three-phase operation involving security of tools, periodic inspection of tool kits, and weapons system inspections.

2. Responsibilities: The appropriate directors are responsible for the implementation of the AMARC tool control and accountability program. The Chief of Forward Supply Management Branch (LGSC) will

be the center tool control manager (TCM) and will establish policies and procedures IAW AFMCI 21-107, *Tool Control and Accountability Program* and AMARCI 21-127.

2.1. The Quality Assurance Office (XP-QA) will assume the responsibilities of the lost tool control monitor (LTCM) and will:

2.1.1. Establish and maintain a lost tool control log that lists pertinent information, i.e., lost-on-aircraft (LOA)/not lost on aircraft (NLOA), type tool lost, was tool found, etc.

2.1.2. Assign report control numbers (RCN) for lost tools.

2.1.3. Affix a locally devised routing sheet to the AFMC Form 310 with dates to ensure timely routing of the report.

2.1.4. Submit a quarterly report to the directors of all lost tool activities and tool spot checks.

3. Safety. The safety requirements of Air Force Occupational Safety and Health Standard (AFOSH STD) 91-66, *General Industrial Operations* will be strictly adhered to by all personnel using tools.

4. Training. All employees who work with tools, along with their management, up to and including division level, will receive the initial training by the Training/Education Division, (XPT) so that they are aware of their responsibilities. Each employee must read and implement the provisions of AFMCI 21-107 and this instruction. The course will be reviewed annually by the office of primary responsibility (OPR) for currency, content and regulatory compliance. The accomplishment of required annual refresher training must be documented and kept on file in XPT.

5. Temporary Duty (TDY) and Depot Field Team (DFT) Tool Kits. The accountable or sponsoring resource cost center (RCC) supervisor will ensure that TDY personnel are briefed on the contents of this instruction.

5.1. TDY personnel and depot field team (DFT) members working at AMARC will comply with AFMCI 21-107 and this instruction, in addition to the tool control and accountability program of their home station.

5.2. The team chief or responsible person will perform a tool kit inventory upon arrival at the TDY site and before departing the site.

5.3. If a tool is lost while performing duty at a TDY site, initiate action IAW local missing tool procedures in paragraph 12.

5.4. AFMC Form 310, **Lost Tool Report**, will be completed when a tool is lost. Send three copies of the completed AFMC Form 310 to the appropriate director for signature and distribution. Copy 1 will be sent to the AMARC Quality Assurance Office, Copy 2 will be mailed to the Quality Assurance Office of the person who lost the tool and copy 3 will be given to the person who lost the tool.

6. Tool And Tool Kit Identification:

6.1. All tools will be issued through the tool issue center and marked with the identification (ID) number before issue. Those too small to mark will be stored in such a manner that a missing tool would be identified at once. Each of these unmarked items will have an asterisk on the Tool Kit/Custody Receipt Listing (TK/CRL). Items made of material impractical to laser-mark, for example, gog-

gles, eyeglasses and plastic boxes, will be hand-etched. **Personal tools will not be used at work site IAW AFMCI 21-107**.

6.2. AMARC tool ID numbers will have the Center Code "AM" followed by a number. This number will correspond to the kit ID number. Each tool (except those indicated in paragraph 7.1) in each kit will be laser-etched, legibly, with the tool ID number by LGSC tool attendants at the time of issue. The ID numbers will not be removed until the tool becomes unserviceable or is removed from the TK/CRL and is returned to the tool issue center. **NOTE:** If laser capability is not available, the alternate method is to hand-scribe the ID number. The tool must be re-etched as soon as laser capability is available. It will be the responsibility of the Tool Control Manager to inform supervisors of the availability of the laser tool-marking machine. It will be the supervisor's responsibility to ensure tools not marked with the laser are done so. All tools that are too large to fit into the laser-marking chamber will be hand-scribed. Laser operators will not by-pass any safety device to mark tools that will not fit into the machine. Tools that are considered sets or kits and are put together by hardware, i.e. nuts, bolts, washers, screws, cotter pins, etc., such hardware will not be counted as pieces of the set/kit and will not be marked. Items used by the NDI Branch (LARI), that are too sensitive to be marked with laser or hand etched, will be marked with stamp pad using indelible ink.

6.3. ITK/CTKs will be stenciled with 1-inch letters noting the kit ID.

6.4. Apex, drill bits and other small items that cannot be etched will be stored in a container and labeled with the type, size (if applicable), and quantity (for example: #2 Phillips, 2 ea.). These items will be identified by an * on the TK/CRL and show total quantity of the items in the container. Containers for these pieces will be marked with the ITK or CTK number and identified on the TK/CRL and will have an inventory listing of contents. AFMC Form 309, **AFMC Tool Control Inventory Record** and folder/envelope will not be annotated on the TK/CRL, as they will remain an integral part of the tool kit.

6.5. Certification stamps do not require the ITK number since the stamp control program tracks them. The stamps may be kept in the ITK if the following stipulations are met:

6.5.1. Certification stamps must be added to both the supervisor and employee's copy of the TK/CRL.

6.5.2. Must be shadowed in drawer.

6.6. An identification number consisting of the letters "AMTR" and a number will mark tools used for temporary issue by the tool room. The letters "AMTR4" and a number will be used to mark tools temporarily issued from tool room four.

6.7. The RCC supervisor may authorize consumable items, such as safety wire and tape, as part of the tool kit. These items will be added to the supervisor and employee's copy of the TK/CRL and will have an individual indentation in the tool kit. (This entry is not required for the master Custody Receipt Listing [CRL]). Inventory procedures for issue and turn-in of kits will include consumable items. ID numbers will be indicated on the outside of the spool of wire or tape when feasible. Common hardware, such as screws, nuts, cotter keys, splices, etc., does not fit this category and will not be authorized as part of the tool kit.

6.8. Locally manufactured tools will be part of the tool kit with approval of the RCC supervisor in coordination with the tool center and must be recorded on all copies of the tool kit custody listing. All

locally manufactured tools must be processed through the tool issue center to ensure proper marking and documentation.

6.9. Technician's personal items (rings, wallets, watches, etc.) may be stored in tool kits by placing them in a separate container or compartment marked "personal items" for the duration of their shift.

7. Tool Issue Center Management And Operation. Tools will not be issued from the tool issue center without a security badge or a letter of authorization for temporary issue. LGSC will operate the tool issue center IAW AFMCI 21-107 as follows:

7.1. Replacement Tools. Tools stored in the tool issue center will be used to replace worn or broken tools. Only tools listed on the CRL may be replaced and only on a one-for-one basis. The ID number must be verified and marked on the replacement tool at the time of issue. If a broken tool requires replacement, all parts must be turned in. Tool room number four located in building 7401A can issue items identified with an * for replacement. If a replacement tool does not meet the above criteria, verification that missing tool procedures were accomplished must be made before reissue. If a replacement tool is backordered, evidence of backorder status must be provided to the person responsible for the tool. A copy of AF Form 2005, **Issue/Turn In Request**, will be given to the person responsible for the tool as evidence of the tool requisition. The copy of the AF Form 2005 will be kept in the envelope/folder with the TK/CRL.

7.2. Temporary Issue Tools. Tools issued from the tool issue center on a temporary basis will be issued for a 30-day period. If the tools are needed longer than 30 days, they must be returned at the end of the 30 days for serviceability check and reissued for another 30-day period. Issue of temporary tools will be accomplished using the Tool Inventory Management Application (TIMA) computerized program. A copy of the computerized listing will be given to the employee and must stay in the tool kit until the tool is turned in. A delinquent tool report will be accomplished weekly and a copy will be sent to the supervisor of personnel who have delinquent tools. Personnel with delinquent tools will not be issued more tools until the overdue tools are turned in. Tools with limited availability will be loaned for the duration of the shift during which they are borrowed. All temporary issued tools will be returned to the main tool room before any extended scheduled absence of 5 days or more.

7.3. Tools Turned in Serviceable (other than temporary issue tools). The ID numbers will be removed before returning the tool to the operating stock (tool issue center) location.

7.4. Tools Turned in Unserviceable. The ID number will be removed and the tool exchanged for a replacement under the Warranty Tool Program. If the tool has been abused as suspected by tool room personnel and the tool warranty representative, forward the report to the responsible division chief. A determination of action will be made at that time.

7.5. Tool Kit Issue and Turn in. Tool kits will be controlled IAW AFMCI 21-107. Tool kits will be processed through the tool issue center and stocked accordingly. The tool attendant and the employee will verify the completeness of a kit by initialing each item and signing the listing prior to leaving the tool issue center. Partial kits will not be issued.

7.6. Tool Purchases. Tool issue center personnel and a tool representative from tool room four are the only personnel authorized to purchase tools with the International Merchant's Purchased Authorization Card (IMPAC). All tool purchases made by main tool issue center will be approved by the Tool Control Manager (TCM) prior to purchase.

7.7. The TCM will send out copies of the templates annually to work center supervisors for review. Supervisors should identify duplicate and infrequently used tools for deletion on each tool kit in the RCC. After the review, supervisors will send the copy back to the TCM.

7.8. All toolboxes have two keys for each lock. The second key will be retained in the tool

issue center.

7.9. Vehicles that are authorized on AMARC flight line may have one cotter pin extractor issued for removal of FOD from the tires. A letter or e-mail identifying the vehicle by serial number is required for issue. Tool room personnel will laser etch the vehicle ID onto the tool and issue the tool to the requesting work center. The supervisor or designated representative from the work center will sign for the tool on the letter or e-mail. Tool room personnel will maintain the letter or e-mail in a folder. The work center should add the tool to the AF Form 1800 **Operator's Inspection Guide and Trouble Report** and AFTO Form 244, **Industrial/Support Equipment Record**. Operators should be made aware that when they do a vehicle check and the tool is missing from the vehicle lost tool procedures should be performed. Replacement tools will not be issued for lost tools without a report.

8. Production Support Center Management And Operation. Support centers can be established to control and issue consumables, bench stock, support equipment, radios, locally manufactured tools/equipment, Custodian Authorization/Custody Receipt Listing (CA/CRL) items that could be left in FOD critical areas, and other items needed to support a maintenance or distribution function.

9. Control of CA/CRL Items. Items or equipment on CA/CRLs that could be left in a weapons system or component thereof will be controlled in any of the following ways. The branch supervisor will identify these items in coordination with LGSC personnel.

9.1. CA/CRL items in divisions that have Production Support Centers can control them through the centers as described in paragraph 8.

9.2. Divisions or branches without tool issue centers will control these CA/CRL items like a CTK as described in 11.2.5, 11.2.6, and 11.2.7.

9.3. Divisions or branches can use a combination of paragraphs 9.1 and 9.2.

10. Items Not Listed On the CA/CRL. Equipment or materials used as tooling but not managed under CA/CRL procedures will be controlled as in paragraph 9.2. These items will be identified by branch supervisors in coordination with LGSC personnel.

11. Tool Security And Tool Kit Inspection:

11.1. Branch supervisors will:

11.1.1. Determine the composition of all tool kits. All changes to the ITK/CRL will require a written letter to the tool issue center except as referenced in paragraph 6.6. Supervisors will ensure that supervisor and employee copies of the ITK/CRL are identical.

11.1.2. Provide locked enclosures, storage racks, cables, chains etc., to secure ITK/CTKs and enforce the use of available security devices by personnel

11.1.3. Ensure ITK/CTKs of personnel who will be absent for 30 days or longer (TDY, sick or annual leave, etc.) and non-issued toolboxes are properly stored.

11.1.4. Ensure AFMC Form 309 has the individual's name, organization, kit number and year legibly typed or printed in ink on the form (see attachment 1). The form will be put in a protective folder/envelope and placed in or on the kit.

11.1.5. Request issue of locally devised tool chits from the tool issue center for use within the division when withdrawing tools from a CTK. The chits will be ID numbered to correspond with each ITK and issued by the tool issue center as part of the tool kit. The chits will be documented on the ITK/CRL. Tool kit custodians will ensure that all chits are accounted for at the end of each shift. AF Form 1297, **Temporary Issue Receipt**, may be used in lieu of chits.

11.1.6. Supervisors who have personnel who work in their centers and do not have an ITK assigned, but use tools from a CTK may use the following procedures instead of using AF Form 1297s for issue from the CTK.

11.1.7. Supervisor may request chits to be made for his work center by letter, Chits will be made with the work center's office symbol and a number, i.e., LASA1, LASA2, etc. The supervisor will sign for the chits from the tool room on the letter. Tool room personnel will maintain the letter on file. The supervisor can sign out all chits with LASA1 to an individual by AF Form1297 or he can maintain a log with a signature block and get each individual to sign by the chit number that the supervisor assigns them.

11.2. Personnel in possession of ITK/CTK will:

11.2.1. Ensure kits are stenciled IAW paragraph 6.

11.2.2. Ensure tool kits and canvas bags are locked whenever leaving the immediate work site. Hand carry type kits will be cabled in order to prevent removal.

11.2.3. Ensure temporary tool kits and canvas bags have a tool counter with then and both counter and bag are marked with the permanent tool kit ID number.

11.2.4. Use tool counters to reflect the number of tools contained in a temporary tool kit. The tool box/pouch and counter will be included the number of tools contained in the temporary tool kit.

11.2.5. Provide security and accountability for special tools or test equipment on temporary issue form the tool issue centers. Turn in tool kits when no longer needed. For inventory purposes, the individual will maintain a copy of the computerized TK/CRL.

11.2.6. Notify the supervisor immediately when adequate security is not available or when tools are missing.

11.2.7. Ensure TKs are always in inspection order for supervisors and applicable inspection teams to include clean and serviceable foam and drawers free of work residue or debris as well as tools not in use in their proper cut out locations.

11.2.8. Request permission from RCC supervisor to add or delete tools from the TK/CRL. Pen and ink changes will be allowed and annotated on all copies of the CRL until a new listing is generated. Anytime tools are added/deleted from and ITK/CTK a letter is required for the RCC supervisor to the Tool Control Manager. Changes to an ITK/CTK will not be accomplished prior to approval by the TCM. A new listing will be issued in three copies after the TCM approves the changes. A change to an ITK will require that all like ITKs be changed.

11.2.9. Inventory tools taken to the job site as follows:

11.2.9.1. Tools will be inventoried and accounted for prior to personnel departing from the work site, at the end of the shift, before engine runs, and aircraft launches. AFMC Form 309 will be annotated at each location prior to leaving the work site by documenting end-of-job or end-of-shift inspection in the appropriate blocks.

11.2.10. Annotate AFMC Form 309 "Not Used" on workdays the kit has not been used.

11.2.11. Implement the lost tool procedure (see paragraph 12) when a tool or parts of tool are missing.

11.2.12. When personnel in the RCC withdraw tools from CTKs or, in some cases, the entire CTK, a chit or hand-receipt identifying that individual's (temporary custodian) TK number will be left to show each tool or CTK removed. When a CTK is returned, the temporary custodian will ensure proper inventory of CTK has been accomplished by annotating AFMC Form 309 at the end of their shift.

NOTE: Inventory of CTKs and tool kits that are utilized in shop areas only may be documented on page one of AFMC FORM 309.

11.2.13. Report any tool kit problems, such as worn or broken tools, deteriorated foam inserts, etc., to the immediate supervisor.

11.3. Supervisors will:

11.3.1. Conduct a random inventory of ITKs, CTKs, and all tools temporarily issued, to include condition and proper ID numbers. (**NOTE:** Descriptions and quantity of tools issued temporarily can be obtained from the servicing tool issue center or the tool kit custodian.) The tool kits must be inspected at least once every 90 days. Completed inventories will be documented on the individual's AFMC Form 309. When the form is full, and a new form is prepared, the supervisor will transfer the last 90-day inspection to the new form or perform an inspection.

11.3.2. Indicate a 90-day inspection has been conducted by entering the following on page four of the AFMC Form 309.

11.3.2.1. Current date.

11.3.2.2. Supervisor's signature and remarks.

11.3.2.3. If a tool or part of a tool is missing, make the appropriate entries in the Lost Tool Documentation portion of page four as follows and implement lost tool procedures.

11.3.2.3.1. Date: Day tool was lost.

11.3.2.3.2. Report Number: Control number assigned to AFMC Form 310.

11.3.2.3.3. Item missing: Nomenclature of missing tool.

12. Lost Tool Procedures:

12.1. When a tool is lost:

12.1.1. The employee will return immediately to the area where the tool was lost and conduct a search. If the tool cannot be found within 15 minutes, the employee will report the incident to the immediate supervisor.

12.1.2. The supervisor will:

12.1.2.1. When informed of a missing tool, begin a thorough search of the suspected areas or weapons system where the tool was lost. If after searching for 2 hours, the tool is not found, notify the LTCM and initiate AFMC Form 310.

12.1.2.2. When a tool is determined to be missing during a flight preparation or in a functional test area, stop all work and make an entry in the AFMC Form 958 or 959, Work Control Document. If an AFTO Form 781A, **Maintenance Discrepancy and Work Document** is being used, a red "X" will be entered in the symbol block. The LTCM will impound the weapons system IAW AMARCI 21-114, *Impoundment Procedures* and notify Master Scheduling Branch (LAAS), Production Control.

12.1.2.3. Obtain all essential data to identify all areas (on the weapons system or off) that are to be searched and document on AFMC Form 310, block 12. Personnel inspecting the areas will indicate the areas searched by initialing the entry in block 12 and signatures will be entered in block 15. Also, annotate the back of the employee's AFMC Form 309 to show the time the tool was reported missing.

12.1.2.4. Continue the search with the assistance of your division chief or designated representative until the tool is found or the search is discontinued by the appropriate directorate or designated representative. If LOA search is required, notify LAAS, Production Control and the appropriate divisions that a tool has been reported lost on a weapons system. Provide the type, model, serial number, and location of the weapons system.

12.1.2.4.1. If tool is found, notify LAAS, Production Control and LTCM. Complete AFMC Form 310 in its entirety. Insert a statement in block number 8 stating the tool was found and check block 16 on AFMC Form 310. Then forward to LTCM.

12.1.2.4.2. If tool is not found, complete AFMC Form 310 and forward the report to the LTCM who will attach a transmittal sheet to the AFMC Form 310 and forward to the appropriate action agencies.

12.1.2.4.3. After the transmittal sheet is returned for filing, the LTCM will make copies and distribute them as follows:

12.1.2.4.3.1. Original copy to Policy and Technical Services Branch (LAAO), Aircraft Records to be placed in aircraft records.

12.1.2.4.3.2. One copy to LGSC.

12.1.2.4.3.3. One copy to originating agency.

12.1.2.4.3.4. One copy for the LTCM file.

12.1.2.4.3.5. The lost tool report will be retained by XP-QA for a minimum of 2 years for critical areas and for 1 year for non-critical areas IAW AFMCI21-107.

12.1.2.4.4. LAAS, Production Control will comply with AMARCI 21-114.

13. Conditions For Discontinuance Of Search.

13.1. FOD Critical Areas:

13.1.1. The supervisor must ensure that the use of x-ray, borescope (fiberoptic, when available), flashlight and mirror inspection procedures, disassembly of components, and other state-of-the-art

procedures and techniques have been considered. Necessary equipment to do the inspections is located in LGSC, Tool Issue Center and LARI, Non-Destructive Inspection Branch.

13.1.2. If the tool is known to be in an inaccessible area and cannot be retrieved, the supervisor must evaluate the situation in order to advise the person who signs the AFMC Form 310. Discontinue search/release end item on block 18.

13.1.3. Request to terminate search can be submitted to director when all visible means of examination have been exhausted.

13.2. Noncritical Areas. The supervisor will determine the procedures and techniques to be used when a tool cannot be found or is known to be located in an inaccessible area before requesting termination of the search.

13.3. When tool is found, discontinue search and advise all personnel involved in the search.

14. Tools Found. An AFMC form 310 will be completed for all tools found not assigned to AMARC. The tools will be turned in to the TCM. The TCM will send a letter to the losing activity stating the circumstances and the tool ID number. In all instances, tools found will be brought to the attention of the supervisor and the FOD prevention officer in order to stress the importance of tool control to all personnel during staff, production, and FOD prevention meetings.

14.1. When a reported lost tool is found after the search procedures are terminated, the tool custodian will report the found tool to the immediate supervisor. The supervisor will send a notification letter of the found tool to the division chief, the director, Tool Room and LTCM (In Turn) describing the circumstances of who, how when and where the tool was found, referencing the tool ID number and the Lost Tool Report number assigned by XP-QA.

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Attachment 1

AFMC FORM 309 DOCUMENTATION INSTRUCTION

A1.1. Page One: Use this page to document Inventory records for CTK and tool kits used in shop areas only.

- Name: Employee's Name.
- Organization: Org/Shop Code.
- Year: Current Calendar Year.
- Kit Number: Number assigned by tool issue center.
- Month/Day: Initial in appropriate block of day and month inventory was performed.

A1.2. Page Two/Three: Documentation of job inventory record.

- Name: Employee's Name.
- Kit Number: Number assigned by tool issue center.
- Date: Date Inventory Completed.
- Time: Time Inventory Completed.
- Inspection:
- End of Job: Check this block when inspection is completed at end of job.
- End of Shift: Check this block when inspection is completed at end of shift.
- Aircraft/Engine Serial Number: Serial number of aircraft or serial number of engine that corresponds to equipment being worked.
- End Item Document Number: Links the inspection to the specific job.
- Initial (if O.K.): Employee initials performing inspection.

NOTE: Pages two and three will be used to annotate "NOT USED" on those workdays when the kit has not been opened or used.

A1.3. Page Four.

- Supervisor's 90-Day Inspection
- Date: Date that supervisor is performing inspection.
- Supervisor's Signature: Signature of supervisor performing inspection.
- Remarks: Supervisor's comments.
- Lost Tool Documentation:
- Date: Day tool was lost.
- Report Number: Control Number assigned to lost tool report (AFMC Form 310).
- Item Missing: Nomenclature of missing tool.